

Project NS Venezuela

Pennsalt Health Agriculture and Industrial Service

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Project NS Venezuela

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Pennsalt Health Agriculture and Industrial Service

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Cables:
PENNSALT

CPYRGHT

I. THE GENERAL PURPOSE:- To provide more wealth and greater security in Venezuela.

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II. THE GENERAL PROGRAM:- To transform the present economy of Venezuela, which now rests essentially on basic hydrocarbon agricultural and mineral production, into a substantially stronger, balanced, agricultural-hydrocarbon-mineral-industrial economy.

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III. THE GENERAL METHOD:- To add to the present economy, new industrial enterprises which

- (1) will complement and strengthen the agricultural, mineral, and hydrocarbon activities of Venezuela, either by making beneficial materials for their use, or by using their products as raw materials for further manufacture.
- (2) will be profitable in themselves.
- (3) will make possible and will attract other desirable industrial enterprises.
- (4) will strengthen the Military Defense of Venezuela.

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IV. THE SPECIFIC MEANS:- Careful studies have indicated that of the many industrial enterprises which could meet the requirements of the General Method, there is one group which stands out above all others, as the most effective and the most rapid means of advancing the General Program toward the General Purpose.

This group of industrial enterprises, which is recommended herewith for establishment in Venezuela, is described in graphic form on the following page and is designated as Project NS Venezuela.

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PROJECT NS VENEZUELA

USE	AGRICULTURE		MINING AND PUBLIC WORKS		HYDROCARBON INDUSTRY AND NEW INDUSTRIES		DEFENSE	
End Products	<u>Chemical Fertilizers</u>		<u>Dynamite</u>		<u>Hydrocarbons, Insecticides, Detergents, Finished Industrial Chemicals</u>		<u>Military Ordnance</u>	
Finished Chemical Products	<u>Super Phosphate</u>	<u>Ammonium Sulphate</u>	<u>Nitro-Glycerin</u>		<u>Miscellaneous Finished Chemicals</u>		<u>TNT (etc.)</u>	
Intermediate Chemical Products			<u>Nitric Acid</u>	<u>Glycerin</u>	<u>Miscellaneous Intermediate Chemicals</u>		<u>Nitric Acid</u>	
Basic Chemical Products	<u>Sulfuric Acid</u>	<u>Sulfuric Acid</u>	<u>Sulfuric Acid</u>	<u>Ammonia</u>	<u>Sulfuric Acid</u>	<u>Ammonia</u>	<u>Sulfuric Acid</u>	<u>Ammonia</u>
Raw Materials	<u>Phosphate Rock</u>	<u>Pyrites or other sulfur-bearing minerals</u>	<u>Pyrites or other sulfur-bearing minerals</u>	<u>Nitrogen from Air; Hydrogen from Water or Hydrocarbons; Electric Power</u>	<u>Pyrites or other sulfur-bearing minerals</u>	<u>Nitrogen from Air; Hydrogen from Water or Hydrocarbons; Electric Power</u>	<u>Pyrites or other sulfur-bearing minerals</u>	<u>Nitrogen from Air; Hydrogen from Water or Hydrocarbons; Electric Power</u>

It will be noted from the preceding Chart I, that Project NS Venezuela is essentially an organism for converting the nitrogen (N) of the air and the sulfur (S) of pyrites or other sulfur-bearing minerals, into chemical products which, when properly coordinated with the other parts of the Project, provide the keys to better Agriculture, Mining, Hydrocarbon Industry, New Industries and Defense.

However, this coordination with the other parts is absolutely necessary to the success of the Project. An important reason for this is that the manufacturing costs in each part of the Project, and especially in the Sulfuric Acid and the Ammonia manufacturing installations are extraordinarily sensitive to the size of the installations and the rates at which they are operated.

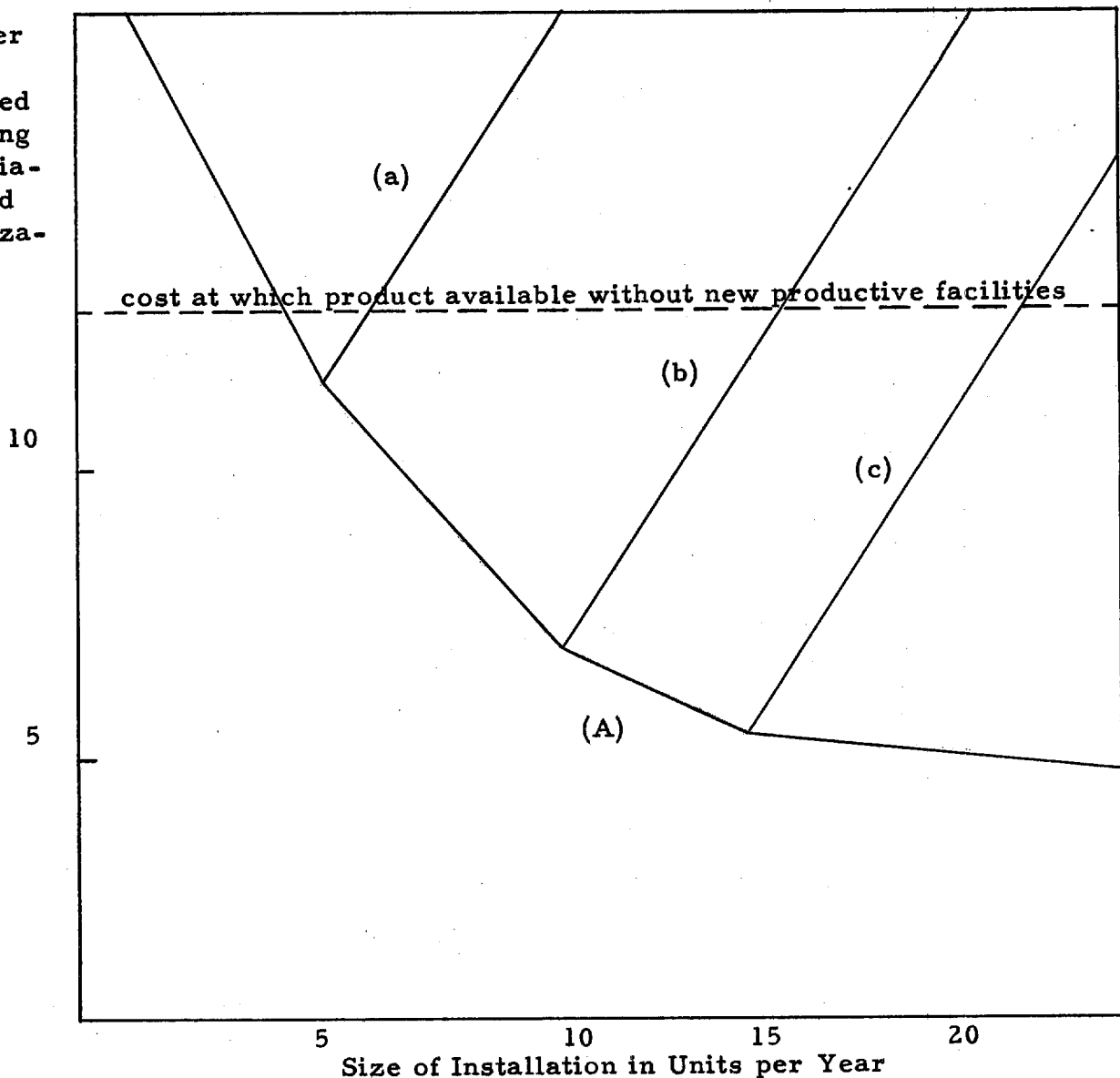
It will be noted that every product on Chart I is already available at some price from productive facilities in other countries, or in some cases, from productive facilities already operating in Venezuela.

The success of the Project depends therefore not only on the availability of all the products, but on their availability at low cost. The economic purposes for establishing new productive facilities for a given product in Venezuela, is to provide the product in the desired amount at a cost lower than previously. If, instead, the new cost should be higher, then the enterprise would damage the economy; if it is lower than previously, then the extent to which it is lower represents the new profit and new strength which the enterprise brings to the economy.

The importance of selecting the right size installation for each product is shown graphically on the following Chart II.

CHART IIEFFECT OF SIZE OF CERTAIN INSTALLATIONS ON COST OF PRODUCT

Cost per
unit
produced
including
deprecia-
tion and
amortiza-
tion



- Curve (A) - This line shows cost per unit if installation is exactly large enough to produce the desired units per year.
- Line a - Represents rise in cost per unit for 5 units per year if installation is larger than necessary.
- Line b - Represents rise in cost per unit for 10 units per year if installation is larger than necessary.
- Line c - Represents rise in cost per unit for 15 units per year if installation is larger than necessary.

As illustrated in the preceding Chart II, there is a critical number of units per year of requirement for a product, below which the cost per unit in any new installation will always be greater than the cost per unit already available from previous sources. Therefore, the first thing that must be determined is whether more than this critical number of units are required.

If the answer is "No", then a new installation for that particular product cannot be profitably made. If the answer is "Yes", then it becomes important to determine as accurately as is possible, the number of units per year required, so that an installation of proper size may be made.

As illustrated by the preceding Chart II, if the installation is too small, the cost per unit will be unnecessarily high for two reasons: first, the benefit of lower costs in a larger installation will be lost, and second, the supplemental amount of products to make up the requirements will have to be purchased at the higher price from previous sources.

If, on the other hand, the installation is much larger than necessary for the units per year required, the cost per unit will also be unnecessarily high, due to excessive depreciation and amortization, and may even exceed the cost of material previously available from other sources.

All of this points to the great importance of determining carefully the units per year required of the principal products in the Project.

This determination is proposed as Step A of the Project. It would include a study of the units per year of the various products in the Project which have in the past been used in Hydrocarbons, Agriculture, Mining, Miscellaneous Industry and Defense, but would go beyond such figures to estimate the additional units per year of each of the products which can be

used to clear advantage in those five fields.

Experience in other countries has shown that particularly for chemical fertilizers used in Agriculture, the amount which can be used to clear advantage may be much greater than the amount which has been used previously. In fact, it is believed that the difference between these two figures for Venezuela represents the difference between a low cost, large, profitable and successful Project, and a high cost, small Project, or even no Project at all.

Step A would provide an estimate of the units per year of each of the important End Products of the Project which could be used to clear advantage, and a conclusion as to whether these amounts would justify proceeding with the project or not.*

If the conclusions of Step A are favorable, then Step B would take this information on rates of use and coordinate it with detailed information to be gathered on raw materials, industrial processes, labor and transportation, so as to provide a specific proposal of the type, size, location, investment and expected profit on each of the productive installations proposed for the project.

If, on the basis of the conclusions of Step B, it is desired to proceed, then Step C would provide the detailed design and engineering of the installations.

*In addition to its importance to the Project, Step A also would provide extremely valuable information for the improvement of the productivity and profits of the growers in the principal agricultural areas of Venezuela, as later shown in the outline of Step A.

Step D would constitute the construction of the installations.

Step E would constitute the supervision of the operations of the entire project for six months and the training of personnel for its continued successful operation thereafter.

An outline of Step A follows:

Step A - Estimate of the number of tons per year to be used, of the principal products of the Project and conclusions on each product, stating whether new productive facilities are economically justified or not. Time required - thirteen (13) months.

A-1. Estimate of the number of tons per year of superphosphate and Ammonium Sulfate or equivalents, which can be used "to clear advantage" on each principal crop in each area of Venezuela. The "clear advantage" amount of the chemical fertilizer is defined as an amount which will surely provide, in the same year in which it is applied, an increase in the value of the crop, substantially greater than the cost of the chemical fertilizer to the grower.

After much study, a method has been developed to determine this important "clear advantage" figure for a chemical fertilizer in a given crop in a given area. The method is showing excellent results in other Regions.

It would be carried out by a team of chemists, agronomists and administrators with experience in this same activity in other areas, working in the fields of the principal agricultural areas of Venezuela, and in a field laboratory, and in a central laboratory in the United States. It would require a complete seasonal cycle of twelve months to complete and would comprise the following:

- A-1 (a) Analysis of reports of previous studies of soil characteristics and effects of chemical fertilizers on the various crops in the various areas.
- A-1 (b) Careful chemical analysis of samples of soil in each principal area for each crop.
- A-1 (c) "Pot tests" by which individual plants of each crop are grown under laboratory surveillance in native soils with varying amounts of the chemical fertilizers.
- A-1 (d) Extensive, carefully controlled tests in the field, by which crops are grown in each area with graduated amounts of the chemical fertilizer.
- A-1 (e) Monthly reports of results for each crop in each area.*
- A-1 (f) Final report of total results, to estimate the tons per year of the chemical fertilizers which can be used "to clear advantage."
- A-2. Estimate of the number of tons per year of dynamite which can be used advantageously in Venezuela.

This would be done by a study of present consumption data and analysis of representative mining, road building and other blasting operations to estimate the effect of local manufacture of dynamite on the consumption of dynamite. This would be carried out by a team of market research engineers with special experience in the

* It will be noted that in addition to the importance of Step A-1 to the Project, the monthly reports of results for each crop in each area, listed under A-1 (e) above, are of tremendous value to the local growers in providing information for the immediate improvement of their productivity and profits.

mining industry, road building and other activities requiring dynamite. It would be done simultaneously with A-1, and would require two to four months to complete.

- A-3. Estimate of the number of tons per year of Sulfuric Acid and Ammonia which could be used advantageously in the Hydrocarbon Industry and new industries of Venezuela within a year after completion of substantial new installations of Sulfuric Acid and Ammonia.

This would be done by a detailed study of the present consumption of Sulfuric Acid and Ammonia in Venezuela and of the opportunities for increasing this in present enterprises and in new industrial enterprises which could be launched profitably, as soon as Sulfuric Acid and Ammonia become available at lower cost by reason of the contemplated new installations. This would be carried out by a team of market research engineers with special experience in industries using Sulfuric Acid and Ammonia. It would be done simultaneously with A-1 and A-2, and would require from two to four months to complete.

- A-4. Estimate of the number of tons per year of TNT or equivalent, which could be used advantageously in the Defense program of Venezuela. This figure would be supplied by the Venezuelan Government.

- A-5. Conversion of end product estimates of A-1, A-2, A-3 and A-4 into equivalent tons per year of each intermediate product, basic

product and raw material in the Project. Consolidation of these figures to show total amounts per year of each. Conclusion with regard to each, stating either that the tons per year of anticipated consumption is so small that it would be more economical to continue to rely on present facilities for that product, or that the tons per year of anticipated consumption is large enough that it would be profitable to add new productive facilities for that product in Venezuela. This would be carried out by a team of management engineers with experience in the various industries represented in the Project. It would require one month to complete, after the twelve month period required for A-1, A-2, A-3 and A-4.

Total time required for Step A would be thirteen months.